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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,721

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EXAMINER

GODENSCHWAGER, PETER F

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/530,721	Applicant(s) SUGIMOTO ET AL.	
	Examiner Peter F. Godenschwager	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 2-7 and 9-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/ are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 2-7 and 9-12 are objected to because of the following informalities: Capital letters signify the beginning of a new claim, therefore, the word "Claim" in claims 2-7 and 9-12 should begin with a lowercase letter. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 recites the limitation "the polyhydric alcohol" in line 3. There is insufficient antecedent basis for this limitation in the claim. Claim 11 recites the limitation "the transition metal" in line 4. There is insufficient antecedent basis for this limitation in the claim. For the purposes of further examination, the polyhydric alcohol is being interpreted as one any polyhydric alcohol disclosed as an easily oxidizable organic compound, and the transition metal as any transition metal disclosed as an additive.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, and 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno et al. (US Pat. No. 5,128,060) in view of Mizutami et al. (US Pat. No. 4,226,636).

Regarding Claims 1, 2, and 6: Ueno et al. teaches a an oxygen absorbing composition comprising ascorbic acid (an easily oxidizable compound) and silica gel (a carrier) where the ascorbic acid may be present in 60-10 percent by weight and the silica gel may be present in 5-50 percent by weight (relative ratios that overlap the claimed greater than 210:100 and 240:100 ratios of claims 1 and 2 respectively) (2:10-12, 31-32 and 3:65-66). Ueno et al. further teaches that the silica gel/carrier particles have a size up to 1000 μm (3:50-51), a size that fits the properties of a granular carrier according to the applicant's original specification (Pg. 6, Lns 5-6).

Ueno et al. does not teach a carrier of calcium silicate of the formula:



where m is 1.6-6.5, n is a positive number (and from 1.0-1.5), and the crystal structure has curved plate crystals of gyrolite calcium silicate and amorphous silicon dioxide. However, Mizutani et al. teaches a calcium silicate with a molar ratio of SiO_2/CaO of 1.55 to 6.5 (i.e. $m=1.55$ to 6.5), that is assembled as thin rose petal-like flakes (curved plate crystals) and is composed of gyrolite-type calcium silicate and amorphous silicon dioxide (2:6-10, 18-26, and 3:57-60). Furthermore, Mizutani et al. teaches that the moles of water/ CaO is greater than zero, and may be 1.17 (i.e. "n", of claims 1 and 6, may be greater than 0, and specifically 1.17) (2:5-10, 17:55-65). Ueno et al. and Mizutani et al. are combinable because they are concerned with the same field of endeavor, namely absorbent materials. At the time of the invention, a person of ordinary skill in the art would have found it obvious to use the calcium silicate of Mizutani et al. with the composition of Ueno et al. and would have been motivated to do so because Mizutani et al. teach that the calcium silicate can replace silica and exhibits superior effects when used as an adsorbent carrier having active ingredients absorbed and fixed thereto (7:62-8:10).

Regarding Claims 7-9: Ueno et al. teach, in addition to the ascorbic acid, the composition further comprising an alkaline compound such as sodium carbonate (an additive working with the ascorbic acid for absorbing oxygen), a reaction accelerator such as ferrous salts, and water (2:43-45, 3:4-10, 23-25).

Regarding Claim 10: Ueno et al. does not teach the specific relative ranges of ascorbic acid, water, alkali compound, and transition metal compound. However, Official notice is taken that it is well known in the art to change the relative amounts of result effective variables such as

ascorbic acid, water, alkali compound, and transition metal compound (See MPEP 2144.05). At the time of the invention, a person of ordinary skill in the art would have found it obvious to change the relative amounts of ascorbic acid, water, alkali compound, and transition metal compound and would have been motivated to do so to optimize the oxygen absorbing effectiveness of the composition.

Regarding Claim 11: Ueno et al. does not teach the specific relative ranges of ascorbic acid, water, and transition metal compound. However, Official notice is taken that it is well known in the art to change the relative amounts of result effective variables such as ascorbic acid, water, and transition metal compound (See MPEP 2144.05). At the time of the invention, a person of ordinary skill in the art would have found it obvious to change the relative amounts of ascorbic acid, water, and transition metal compound and would have been motivated to do so to optimize the oxygen absorbing effectiveness of the composition.

Regarding Claim 12: Ueno et al. further teaches that the composition can be packed in a bag (packing material) of perforated (gas-permeable) polyethylene film (6:35-41).

Claims 1, 3-5, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugihara et al. (US Pat. No. 5,102,673) in view of Mizutani et al. (US Pat. No. 4,226,636) and Ueno et al. (US Pat. No. 5,128,060).

Regarding Claims 1 and 12: Sugihara et al. teaches a granulated oxygen absorbing material with a carrier that can be incorporated in a permeable packing material (3: 1-10, and 4:33-35, 51-52).

Sugihara et al. does not teach where the composition comprises an easily oxidizable organic composition. However, Ueno et al. teaches the use of ascorbic acid present in 60-10 percent by weight and silica gel (a carrier) present in 5-50 percent by weight (relative ratios that overlap the claimed greater than 210:100 of claim 1). Sugihara et al. and Ueno et al. are combinable because they are concerned with the same field of endeavor, namely oxygen absorbing compositions for packaging. At the time of the invention, a person of ordinary skill in the art would have found it obvious to use the ascorbic acid composition of Ueno et al. in the composition of Sugihara et al. and would have been motivated to do so because ascorbic acid is safer than the boron compounds of Sugihara et al. and would be more suitable for food packaging.

Sugihara et al. does not teach a carrier of calcium silicate of the formula:



where m is 1.6-6.5, n is a positive number (and from 1.0-1.5), and the crystal structure has curved plate crystals of gyrolite calcium silicate and amorphous silicon dioxide. However, Mizutani et al. teaches a calcium silicate with a molar ratio of SiO_2/CaO of 1.55 to 6.5 (i.e. $m=1.55$ to 6.5), that is assembled as thin rose petal-like flakes (curved plate crystals) and is composed of gyrolite-type calcium silicate and amorphous silicon dioxide (2:6-10, 18-26, and 3:57-60). Furthermore, Mizutani et al. teaches that the moles of water/ CaO is greater than zero, and may be 1.17 (i.e. "n", of claims 1 and 6, may be greater than 0, and specifically 1.17) (2:5-10, 17:55-65). Sugihara et al. and Mizutani et al. are combinable because they are concerned with the same field of endeavor, namely absorbent materials. At the time of the invention, a person of ordinary skill in the art would have found it obvious to use the calcium silicate of

Mizutani et al. with the composition of Sugihara et al. and would have been motivated to do so because Mizutani et al. teach that the calcium silicate can replace carriers such as silica and exhibits superior effects when used as an adsorbent carrier having active ingredients absorbed and fixed thereto (7:62-8:10). Furthermore, Sugihara et al. teaches that calcium silicate may be used as the carrier (3:55).

Regarding Claims 3 and 5: Sugihara et al. further teach that the carrier may be used in combination with a binder such as polyacrylic acid and polyvinyl alcohol for granulation (4:50-60).

Sugihara et al. does not teach the relative ratios of binder and carrier. However, Official notice is taken that it is well known in the art to change the relative amounts of result effective variables such as binder and carrier (See MPEP 2144.05). At the time of the invention, a person of ordinary skill in the art would have found it obvious to optimize the relative amounts of binder and carrier and would have been motivated to do so to optimize the oxygen absorbing capacity and flowability of the composition.

Regarding Claim 4: Sugihara et al. further teach that the carrier may be a combination that includes activated carbon (3:52-60).

Sugihara et al. does not teach the relative ratios of binder, and carriers. However, Official notice is taken that it is well known in the art to change the relative amounts of result effective variables such as binder and carriers (See MPEP 2144.05). At the time of the invention, a person of ordinary skill in the art would have found it obvious to optimize the relative amounts of binder and carrier and would have been motivated to do so to optimize the oxygen absorbing capacity and flowability of the composition.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See attached form PTO-892.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter F. Godenschwager whose telephone number is (571) 270-3302. The examiner can normally be reached on Monday-Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PFG
January 9, 2008


MARK EASHOO, PH.D.
SUPERVISORY PATENT EXAMINER

22/Jan/08